

# SEGA

*MICHAEL JACKSON'S*  
**MOONWALKER™**

## Owner's Manual

**3 PLAYER UPRIGHT**

**SEGA ENTERPRISES, INC.**



999-0038

*MICHAEL JACKSON'S*

# MOONWALKER™

BY:

SEGA Enterprises, Inc. (U.S.A.)

2149 Paragon Drive

San Jose, California 95131

Phone Number (408) 435-0201

FAX Number (408) 435-0294

## SPECIFICATIONS

|                    |                           |
|--------------------|---------------------------|
| INSTALLATION SPACE | : 28.5 INCHES X 33 INCHES |
| HEIGHT             | : 97 INCHES               |
| POWER              | : 250 WATTS               |
| DISPLAY TYPE       | : 25 INCH COLOR MONITOR   |
| WEIGHT             | : 215 POUNDS              |

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

## Table of Contents

|   |    |
|---|----|
| Introduction  | 3  |
| Handling and Installation Precautions                 | 3  |
| Prevention of Counterfeiting and Conversion Labelling | 4  |
| Precautions Concerning the Place of Installation      | 5  |
| F.C.C. Requirements                                   | 5  |
| Opening the Control Panel                             | 6  |
| Cabinet Diagram                                       | 7  |
| Parts List  | 8  |
| Service Switches                                      | 9  |
| Pin Assignments                                       | 10 |
| Monitor Adjustments                                   | 11 |
| In Case of Difficulty                                 | 12 |
| Switch Setting Sheet                                  | 13 |
| Schematic Diagram                                     | 14 |

NOTE: DESCRIPTIONS HEREIN CONTAINED MAY BE SUBJECT TO IMPROVEMENT OR CHANGES WITHOUT NOTICE.

## INTRODUCTION OF THE OWNER'S MANUAL

SEGA ENTERPRISES, LTD., supported by its high electronic technology of LSIs, microprocessors, etc. and a wealth of experience, has for more than 30 years been supplying various innovative and popular game machines to the world market. This OWNER'S manual is intended to provide detailed comments together with all the necessary information covering the operation in general of electronic assemblies, electromechanical servicing control, spare parts, etc. The manual is intended for those who have knowledge of electricity and technical expertise especially in ICs, CRTs, microprocessors, etc. Carefully read so as to acquire sufficient knowledge before working on the machine. Should there be a malfunction, non-technical personnel should under no circumstances touch the interior system.

## HANDLING PRECAUTIONS

When installing or inspecting, be very careful of the following points and pay attention to ensure that the player can enjoy the game safely.

- o Be sure to turn the power off before working on the machine.
- o To insert or pull out the plug quickly is dangerous.
- o It is necessary to make sure that the power cord or the grounding wire is not exposed on the road, etc. in a manner so as to be dangerous. Make sure that grounding connections are made safely at the position where specified.
- o Do not use any fuse that does not meet the specified rating.
- o Make complete connections for the IC board and other connectors. Insufficient insertion is very dangerous.

Also, for the IC board circuit inspections, only the logic probe is allowed. The use of a tester is not permitted, so be careful in this regard. After confirming that there are no irregularities, turn the power ON.

## PREVENTION OF COUNTERFEITING AND CONVERSION

### LABELLING

To prevent counterfeits and conversions, the following labels are put on all the SEGA products. When handling such goods, be sure to confirm the labels. They are used to prevent illegal acts such as the unauthorized copying of the products and the printed circuit boards thereof or carrying on business by manufacturing similar merchandise or by converting, selling or using such products or printed circuit boards.

The following seal is put on the machines manufactured by SEGA



### ORIGINAL SEAL

### COPYRIGHT NOTICE

This SEGA product has the copyright notice as follows:

© SEGA 1990

This signifies that this work was disclosed in 1990 and is the property of  
SEGA ENTERPRISES, LTD.

## **PRECAUTIONS CONCERNING THE PLACE OF INSTALLATION**

This is an indoor game machine. Absolutely do not install it outside. Even indoors, avoid installing in places mentioned below so as to ensure proper usage:

- o Places subject to rain or water leakage, or condensation due to humidity.
- o In the proximity of an indoor swimming pool and/or shower.
- o Places subject to direct sunlight.
- o Places subject to heat sources from heating units, etc., or hot air.
- o Vicinity of highly flammable/volatile chemicals or hazardous matter.
- o Sloped surfaces.
- o Vicinity of anti-disaster facilities such as fire exits and fire extinguishers.
- o Places subject to any type of violent impact.
- o Dusty places.
- o Residential Environment - (See F.C.C. statement below)

## **F.C.C. REQUIREMENTS**

The Federal Communications Commission requires that all Class A equipment be verified and labeled as follows:

**This equipment complies with the requirements in part 15 of FCC Rules for a Class A computing device. Operation of this equipment in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take what ever steps are necessary to correct the interference.**

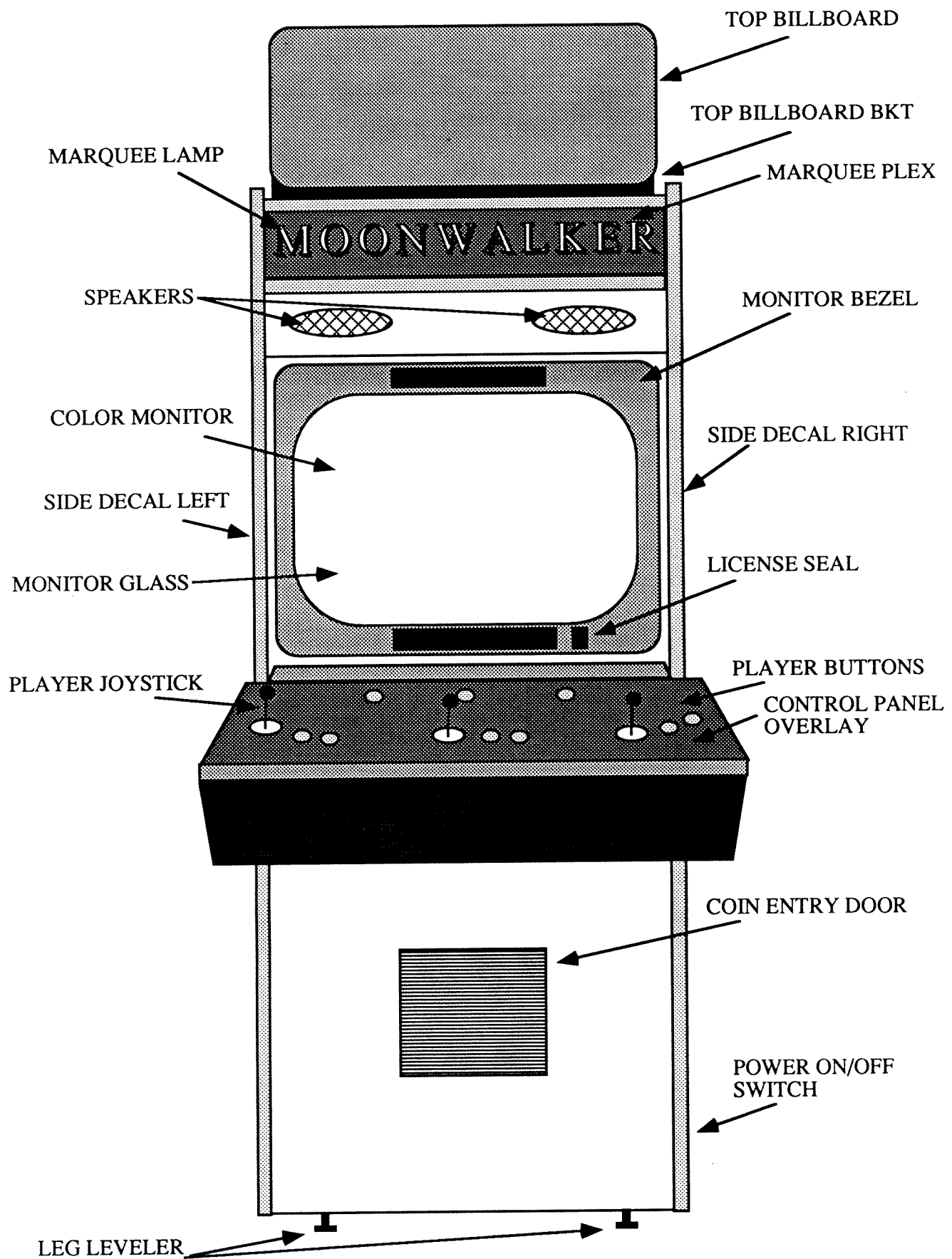
*This label must be permanently attached in a conspicuous location and the text must be legible. If this label is removed or tampered with, such action is punishable under Section 503 of the Communications Act of 1934 (ACT), as amended.*

## **OPENING THE CONTROL PANEL FOR SERVICE OR TO GAIN ACCESS TO THE PC BOARD AREA.**

To open the control panel and gain access to the PC Board for maintenance or replacement follow these procedures:

**NOTE: Use caution in lowering the control panel, so it does not fall. When ready to lower the control panel close the service door and remove the key so this does not damage the control panel overlay or the key.**

- o Open the Coin Door, and disengage the 2 Super Clamps holding the control panel. This can be done by putting your arm through the coin door opening and reach up to the upper right hand corner of the control panel and un-latch the super clamp. Repeat this process for the clamp in the upper left hand corner.
- o To remove the control panel, remove the four bolts on the hinge that hold the panel in place, and disconnect the control panel harness.
- o To gain access to the PC Board remove the cover of the RFI cage by pulling upward on the Ny-latch fasteners.



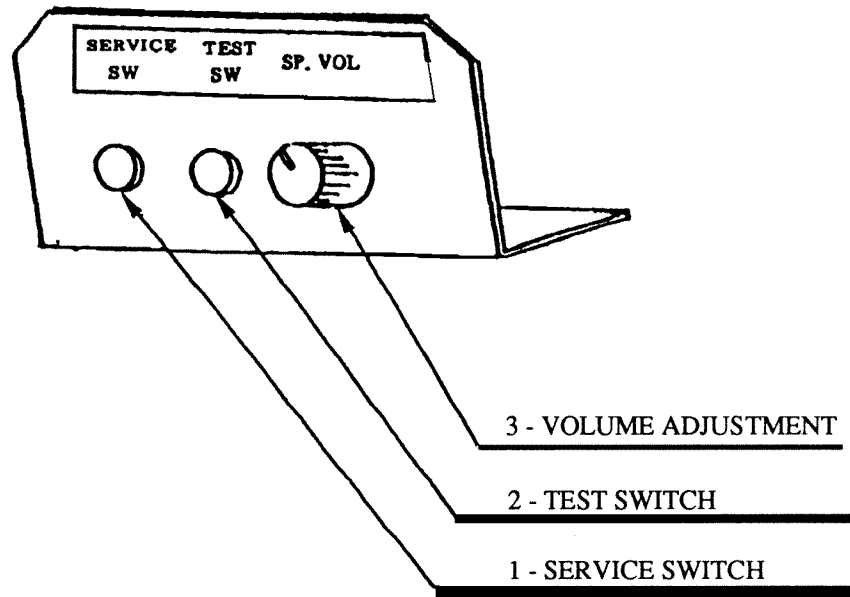


## MOONWALKER PARTS LIST

| PART NUMBER  | DESCRIPTION                          | QTY |
|--------------|--------------------------------------|-----|
| 880302500    | MONITOR, 25" STD RES                 | 1   |
| 880903100    | LAMP, FLUORESCENT 15W                | 1   |
| 880801200    | FIXTURE, FLUORESCENT 15W             | 1   |
| 999-0038     | MANUAL                               | 1   |
| 421-5801-127 | LICENSE SEAL, MOONWALKER             | 1   |
| 421-6709     | STICKER, SERVICE INSTRUCTIONS        | 1   |
| 999-0044     | MARQUEE PLEX                         | 1   |
| 999-0041     | TOP BILLBOARD                        | 1   |
| 999-0053     | MONITOR CARD, 25"                    | 1   |
| 999-0052     | CONTROL PANEL OVERLAY                | 1   |
| 999-0045     | DECAL, SIDE LEFT                     | 1   |
| 999-0046     | DECAL, SIDE RIGHT                    | 1   |
| 999-0042     | DECAL, MICHAEL JACKSON               | 2   |
| 889902300    | RHEOSTAT, 100 OHM 10W                | 1   |
| 860800400    | BUTTON, RED                          | 2   |
| 860800500    | BUTTON, BLUE                         | 2   |
| 860800700    | BUTTON, WHITE                        | 5   |
| 889900400    | SWITCH, PB MOMENTARY                 | 2   |
| 880301000    | TRANSFORMER                          | 1   |
| 600-5891-09  | WIRE HARN, 56P, 3P                   | 1   |
| 889900100    | KNOB, 1/8"                           | 1   |
| 833-7528-01  | GAME PCB, SYSTEM 18 MOONWALKER       | 1   |
| 839-0207     | FILTER BOARD, GF                     | 1   |
| 800804000    | SHIELD LID, (HL-4102)                | 1   |
| 800802900    | SHIELD CASE, (HL-4104)               | 1   |
| 860800600    | JOYSTICK, 8 WAY                      | 3   |
| 880800700    | ENCLOSURE, COIN HOUSING TRIPLE ENTRY | 1   |
| 860300700    | BRACKET, MARQUEE, PLASTIC TOP        | 1   |
| 860300800    | BRACKET, MARQUEE, PLASTIC BOTTOM     | 1   |
| 999-0048     | BRACKET, TOP BILLBOARD               | 1   |
| 851500700    | MONITOR BEZEL                        | 1   |
| 911500200    | MONITOR GLASS                        | 1   |
| 880802000    | SPEAKER                              | 2   |
| 880300700    | POWER SUPPLY                         | 1   |
| 890300100    | LEVELER, LEG                         | 4   |
| 890300500    | CONTROL PANEL LATCH                  | 2   |

## SERVICE SWITCHES

Open the COIN CHUTE DOOR, and the following SERVICE SWITCH layout will appear:



(1) SERVICE SWITCH

Used for the purpose of servicing and increasing the credits without registering on the meter (this allows you to check the game).

(2) TEST SWITCH

For the operation of this switch, see SELF-TEST.

(3) VOLUME ADJUSTMENT

Used for adjusting the volume of the speaker.

# MOONWALKER

## PIN ASSIGNMENTS

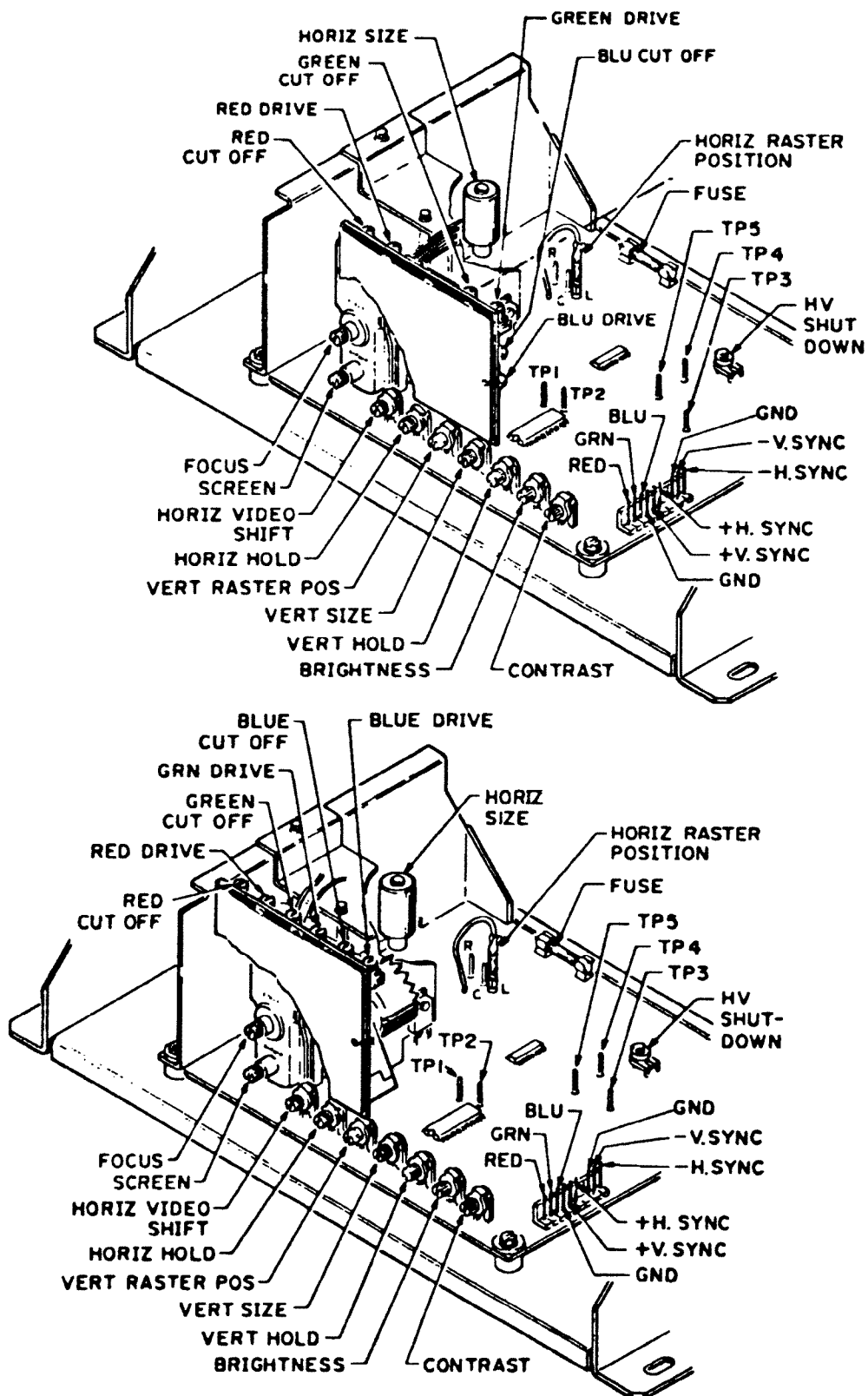
| PIN ASSIGNMENTS<br>(JAMMA) |    |   |                    |
|----------------------------|----|---|--------------------|
| <u>COMPONENT SIDE</u>      |    |   | <u>SOLDER SIDE</u> |
| GND                        | 1  | A | GND                |
| GND                        | 2  | B | GND                |
| +5V                        | 3  | C | +5V                |
| +5V                        | 4  | D | +5V                |
| (NOT USED)                 | 5  | E | (NOT USED)         |
| +12V                       | 6  | F | +12V               |
| (NOT USED)                 | 7  | H | (NOT USED)         |
| COIN METER 1               | 8  | J | COIN METER 2       |
| (NOT USED)                 | 9  | K | (NOT USED)         |
| SPEAKER (+)                | 10 | L | SPEAKER (-)        |
| (NOT USED)                 | 11 | M | (NOT USED)         |
| RED                        | 12 | N | GREEN              |
| BLUE                       | 13 | P | SYNC               |
| GND(SYNC)                  | 14 | R | SERVICE            |
| TEST                       | 15 | S | (NOT USED)         |
| COIN 3 (RP)                | 16 | T | COIN 2 (CP)        |
| 1P (LP) START              | 17 | U | 2P (CP) START      |
| 1P (LP) UP                 | 18 | V | 2P (CP) UP         |
| 1P (LP) DOWN               | 19 | W | 2P (CP) DOWN       |
| 1P (LP) LEFT               | 20 | X | 2P (CP) LEFT       |
| 1P (LP) RIGHT              | 21 | Y | 2P (CP) RIGHT      |
| 1P (LP) SHOT               | 22 | Z | 2P (CP) SHOT       |
| 1P (LP) DANCE              | 23 | a | 2P (CP) DANCE      |
| (NOT USED)                 | 24 | b | (NOT USED)         |
| 1P (LP) SERVICE            | 25 | c | 2P (CP) SERVICE    |
| 3P (RP) START              | 26 | d | COIN 1 (LP)        |
| GND                        | 27 | e | GND                |
| GND                        | 28 | f | GND                |

### JST CONNECTOR

#### 12 PIN

|    |                 |
|----|-----------------|
| 1  | (NOT USED)      |
| 2  | 3P (RP) SHOT    |
| 3  | 3P (RP) DANCE   |
| 4  | (NOT USED)      |
| 5  | 3P (RP) SERVICE |
| 6  | (NOT USED)      |
| 7  | 3P (RP) DOWN    |
| 8  | 3P (RP) UP      |
| 9  | 3P (RP) RIGHT   |
| 10 | 3P (RP) LEFT    |
| 11 | (NOT USED)      |
| 12 | GND             |

LP -> LEFT PLAYER  
 CP -> CENTER PLAYER  
 RP -> RIGHT PLAYER



# MONITOR ADJUSTMENTS

## **In Case of Difficulty**

### **No Raster/No Video**

- Check A.C. line cord
- Check line fuse
- Check monitor brightness
- Check power switch and/or interlock switch
- Check all solder connections on line filter and transformer
- Check for proper orientation of the 56 pin PCB connector

### **Raster/No Video**

- Check all PCB to monitor connections
- Check power supply voltage on PCB

### **No Video/Game sounds can be heard**

- Check monitor brightness
- Check all PCB to monitor connections

### **Incorrect Colors**

- Monitor needs degaussing
- Check for proper wiring between PCB and monitor
- Check monitor adjustment and adjust if necessary

### **Wavy Picture**

- Check monitor ground is properly connected to monitor
- Be certain sync inputs are properly connected to monitor
- Check horizontal hold adjustment

### **Vertical Roll/Horizontal Tear**

- Check horizontal and/or vertical hold adjustments
- Check for proper wiring of sync from PCB to monitor

### **No Sound**

- Check volume control potentiometer adjustment
- Check for + 12 volts on edge connector of PCB
- Check wiring from PCB to speaker
- Check speaker for low resistance between the " + " and " - " tabs

### **Bad Sound**

- Check wiring to speaker for bad solder connections
- Check sound with another speaker

### **No Switch Input**

- Check ground connection to switches
- Check wiring between PCB and switch/es for proper connection
- Check switch/es with an ohm meter to verify proper operation

### **Switch Operates Incorrect Function**

- Check wiring between PCB and switches for proper orientation
- Check wiring for shorts between switch inputs

### **No Coin Meter**

- Check wiring to coin meter
- Check that + 5 volts is on + side of meter
- Verify a + 5 volt meter is used

### **When coin switch is made and meter pulses, the screen blanks out and/or game resets**

- Verify that a meter with a diode is used
- If no diode is built in meter a 1N4004 can be used across the meter. Cathode to "+" side of meter and anode to "-" side of meter.

# MOONWALKER

## DIP SWITCH ASSIGNMENT

| COIN / CREDIT OPTION SWITCH SETTING |           |     |     |     |     | DIP SW #1 |   |   |   |
|-------------------------------------|-----------|-----|-----|-----|-----|-----------|---|---|---|
| OPTION                              |           | 1   | 2   | 3   | 4   | 5         | 6 | 7 | 8 |
| 1 COIN                              | 1 CREDIT  | OFF | OFF | OFF | OFF |           |   |   |   |
| 1 COIN                              | 2 CREDITS | ON  | OFF | OFF | OFF |           |   |   |   |
| 1 COIN                              | 3 CREDITS | OFF | ON  | OFF | OFF |           |   |   |   |
| 1 COIN                              | 4 CREDITS | ON  | ON  | OFF | OFF |           |   |   |   |
| 1 COIN                              | 5 CREDITS | OFF | OFF | ON  | OFF |           |   |   |   |
| 1 COIN                              | 6 CREDITS | ON  | OFF | ON  | OFF |           |   |   |   |
| 2 COINS                             | 1 CREDIT  | OFF | ON  | ON  | OFF |           |   |   |   |
| 3 COINS                             | 1 CREDIT  | ON  | ON  | ON  | OFF |           |   |   |   |
| 4 COINS                             | 1 CREDIT  | OFF | OFF | OFF | ON  |           |   |   |   |
| 2 COINS                             | 3 CREDITS | ON  | OFF | OFF | ON  |           |   |   |   |
| 2 COINS                             | 1 CREDIT  | OFF | ON  | OFF | ON  |           |   |   |   |
| 4 COINS                             | 2 CREDITS |     |     |     |     |           |   |   |   |
| 5 COINS                             | 3 CREDITS |     |     |     |     |           |   |   |   |
| 6 COINS                             | 4 CREDITS |     |     |     |     |           |   |   |   |
| 2 COINS                             | 1 CREDIT  | ON  | ON  | OFF | ON  |           |   |   |   |
| 4 COINS                             | 3 CREDITS |     |     |     |     |           |   |   |   |
| 1 COIN                              | 1 CREDIT  | OFF | OFF | ON  | ON  |           |   |   |   |
| 2 COINS                             | 2 CREDITS |     |     |     |     |           |   |   |   |
| 3 COINS                             | 3 CREDITS |     |     |     |     |           |   |   |   |
| 4 COINS                             | 4 CREDITS |     |     |     |     |           |   |   |   |
| 5 COINS                             | 6 CREDITS |     |     |     |     |           |   |   |   |
| 1 COIN                              | 1 CREDIT  | ON  | OFF | ON  | ON  |           |   |   |   |
| 2 COINS                             | 2 CREDITS |     |     |     |     |           |   |   |   |
| 3 COINS                             | 3 CREDITS |     |     |     |     |           |   |   |   |
| 4 COINS                             | 5 CREDITS |     |     |     |     |           |   |   |   |
| 1 COIN                              | 1 CREDIT  | OFF | ON  | ON  | ON  |           |   |   |   |
| 2 COINS                             | 3 CREDITS |     |     |     |     |           |   |   |   |
| FREE PLAY                           |           | ON  | ON  | ON  | ON  |           |   |   |   |
| COIN SW                             |           |     |     |     |     | NOT USED  |   |   |   |

| GAME OPTION SWITCH SETTINGS |            |     |     |     |     | DIP SW #2 |     |     |     |
|-----------------------------|------------|-----|-----|-----|-----|-----------|-----|-----|-----|
| OPTION                      |            | 1   | 2   | 3   | 4   | 5         | 6   | 7   | 8   |
| 1 CREDIT TO START           |            | OFF |     |     |     |           |     |     |     |
| 2 CREDITS TO START          |            | ON  |     |     |     |           |     |     |     |
| ADVERTISE                   | OFF        |     | OFF |     |     |           |     |     |     |
| SOUND                       | ON         |     | ON  |     |     |           |     |     |     |
| NUMBER OF                   | 2          |     |     | OFF |     |           |     |     |     |
| PLAYERS                     | 3          |     |     | ON  |     |           |     |     |     |
| PLAYER INITIAL              | LOW        |     |     |     | OFF |           |     |     |     |
| VITALITY                    | HIGH       |     |     |     | ON  |           |     |     |     |
| PLAY                        | 3-P        |     |     |     |     | OFF       |     |     |     |
| MODE                        | 2-P        |     |     |     |     | ON        |     |     |     |
| COIN CHUTE                  | INDIVIDUAL |     |     |     |     |           | OFF |     |     |
| MODE                        | COMMON     |     |     |     |     |           | ON  |     |     |
| GAME DIFFICULTY             | NORMAL     |     |     |     |     |           |     | OFF | OFF |
|                             | EASY       |     |     |     |     |           |     | ON  | OFF |
|                             | HARD       |     |     |     |     |           |     | OFF | ON  |
|                             | HARDEST    |     |     |     |     |           |     | ON  | ON  |

